

2. (Twice Amended) The nucleic acid molecule of claim 1 which comprises a nucleic acid sequence selected from the group consisting of CVP1, CVP2, pA, pB, pC, pD, pE, p_ΔB, p_ΔC, p_ΔD1, p_ΔD2, p_ΔD3, p_ΔDE1, p_ΔDE2, p_ΔDE3 and p_ΔE, having the respective sequences shown in SEQ ID NOs 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, and 17[, respectively].

REMARKS

Consideration of this application in view of the amendments above and the discussion below is respectfully requested.

Claims 10-15 have now been withdrawn from consideration as being drawn to a non-elected invention. Applicants have now accordingly canceled claims 10-15 without prejudice to allow Applicants to pursue the subject matter in a divisional application. Claims 1-9 are pending. Claims 1 and 2 have been amended to address indefiniteness rejections. Support for the amendment to claim 1 can be found at page 17, line 10-12. Support for the amendment to claim 2 is found in the claim itself. The title of the specification has been amended in response to the Examiner's request. Appendix I provides the marked-up version of the claims.

Applicants have deleted the Sequence Listing present in the Corrected Version of the International Application Published under the PCT (copy enclosed) because a replacement Sequence Listing was submitted on November 7, 2000 in Applicants' Response to the PTO Notice to Comply with Sequence Listing Requirements. To adjust for the deletion of the original Sequence Listing, Applicants request that the page numbers of the claim pages in the Corrected Version be adjusted accordingly as indicated in the Amendments above.

Applicants believe that no new matter has been introduced by the amendments made herein.

I. The Amendments

Applicants acknowledge that the Examiner did not enter the amendments filed on Applicants response mailed November 7, 2000 and filed November 30, 2000 identified as Paper No. 7. The undersigned telephoned the Examiner after receiving the present Action regarding the unentered amendments. During that conversation, it was determined that the application in the Examiner's file for the present national stage application was not the "Corrected Version" of the International Application Published Under the PCT" but rather the original uncorrected version lacking substitute pages. To facilitate entry of the previous amendments in Paper No 7 and the amendments in the present response, Applicants have therefore enclosed a substitute specification identified as the "Corrected Version" of the International Application Published Under the PCT. Applicants thus request entry of the Corrected Version, the amendments to that specification and claims made on Applicants' response in Paper No. 7, and the amendments provided herein.

Support for the amendments in the present response to the noted claims has been identified in the Remarks section. Applicants respectfully request entry of these as well as the previously made amendments.

Applicants also have enclosed in the present response an Application Data Sheet indicating a corrected priority claim. Applicants respectfully request entry thereof.

With regard to the comments, objections and rejections presented in the Action by the Examiner, Applicants' response continues below.

II. Sequence Listing Compliance

The Examiner has indicated that the application fails to comply with the requirements of 37 CFR 1.821 through 1.825 because a paper copy and the corresponding computer readable form were not provided. Applicants direct the Examiner's attention to the Response to Notice to Comply with the Sequence Listing requirements mailed on November 7, 2000 and filed as Paper No. 7 referred to above.

Both a paper copy and a computer readable form were submitted with that response along with amendments to the Corrected Version of the specification. In view of the submission that is in compliance with the Sequence Listing rules, Applicants ask that the Examiner withdraw this objection. In addition, the Corrected Version of the specification has the required SEQ ID NOs for the disclosed and listed sequences. Applicants thus believe that the application is in compliance with the Sequence Listing rules. Applicants have requested that the original Sequence Listing present in the Corrected Version, on pages 77-91, be deleted and the replacement Sequence Listing submitted in Paper No. 7 be entered.

III. Objection to the Specification

1. Figures

The Examiner has objected to the specification in that the figures referred to in the text of the specification do not correspond with the figures on file. In the present response, Applicants have provided formal figures, 12 figures on 12 sheets, in compliance with the Official Draftsman notice on Form 948 and consistent with the figure descriptions and references thereto in the Corrected Version of the specification. Applicants respectfully request that the formal figures be entered and forwarded to the Official Draftsman.

2. Abstract

Applicants have enclosed the requested Abstract on page 80 and respectfully request the entry of it into the record.

3. Title of the Invention

Applicants have amended the title to more accurately reflect the pending invention and respectfully request the entry of it into the record.

IV. Rejection under 35 U.S.C. §112, First Paragraph

Claims 1-9 are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable any one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicants respectfully traverse this rejection.

The Examiner has alleged that the specification, while being enabling the cassava vein mosaic virus promoter sequences shown in SEQ ID NOs 1-16, is not enabling for promoter sequences having 80% identity to at least 18 sequential nucleotides found in the cassava vein mosaic virus promoter sequence in SEQ ID NO 3. The Examiner contends that undue experimentation is required to determine a promoter sequence that falls within the scope of the pending claims.

The test for determining whether undue experimentation negates enablement "... is nor merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which experimentation should proceed." *In re Wands*, 858 F.2d 731, 735, 8 USPQ2d 1400, 1402-03 (Fed. Cir. 1988). The Examiner referred to the eight factors of *In re Wands* with respect to the present specification and merely stated that the specification lacks adequate guidance and the prior art "does not show how to use a 18-base pair sequence that is 80% identical to 18 contiguous sequence of SEQ ID NO:3 for promoter..." and that there is no reasonable expectation of success. In response, Applicants direct the Examiner's attention to the guidance of how to make a promoter that falls within the scope of claim 1 in the specification at page 19, lines 11-19, page 20, lines 3-16, and page 22, lines 10-21. The specification further provides exemplary guidance of how to use a promoter within the scope of claim 1 for expression of operably linked heterologous sequences at page 18, lines 22 to 30 continuing to page 19, lines 1-2, page 19, lines 26-31 continuing to page 20, lines 1-2, and page 22, lines 22-31. The Examples provide stepwise procedures of how to make and use promoters derived from different cassava vein mosaic virus that all function successfully to express a heterologous sequence. One of

ordinary skill in the art has the knowledge as well as the techniques to readily identify a stretch of 18 contiguous nucleotides in the cassava vein mosaic virus sequence of SEQ ID NO 3, configure a sequence therefrom that has a minimum of 80% identity thereto and ligate it to a heterologous sequence for expression in cloning expression vectors as taught in the specification at page 56, lines 2-27.

Applicants contend promoters and modified promoters from known promoter sequences are well known to one of ordinary skill in the art and that such a person would consider the invention reasonably to include any molecule that is known or could readily be evaluated with the methods of the invention as described on specification beginning on page 31, lines 29-31 continuing to page 36, lines 1-22. The determination of a compound having the requisite activity is not undue. According to the courts, Applicants need not prepare and test each and every possible combination of promoters encompassed by the claims. The relevant inquiry in determining whether a particular claim is supported by the specification is whether the specification contains sufficient teachings regarding the subject matter of the claim as to enable one skilled in the art to make and use the invention. *In re Moore*, 169 USPQ 236, 239 (C.C.P.A. 1971; emphasis added). Arguably, even if some experimentation is necessary, enablement is not precluded. *Atlas Powder Co. v. E. I. duPont de Nemours & Co.*, 224 USPQ 409, 413 (Fed. Cir. 1984). Applicants submit that "what the Patent Office is here attempting is to limit the claims to the specific examples, notwithstanding the disclosure of a broader invention. This it may not do." *In re Anderson*, 176 USPQ 331, 333 (CCPA 1973).

Applicants thus assert that the specification teaches how to make and use a sufficient number of exemplary promoters derived from SEQ ID NO 3 having the claimed characteristics and that one of ordinary skill in the art would have known how to practice the claimed invention without undue experimentation.

In view of the foregoing, the teachings in the specification of how to make and use the claimed promoter sequences for expression of an operably linked heterologous sequence, the state of art at the time the invention was made, and methods to identify

promoter sequences having the claimed characteristics that does not require undue experimentation, Applicants assert that they are entitled to claims commensurate in scope with the teaching in the specification.

Based on the enabling guidance in the specification, Applicants assert that the rejection for enablement has been overcome. Applicants therefore respectfully request that the present rejection be withdrawn and the claims proceed to allowance.

V. Rejection under 35 U.S.C. §112, Second Paragraph

Claims 1-9 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

The language allegedly considered as indefinite in claim 1 is the phrase "capable of initiating". The Examiner is unsure if additional claim limitations are required to result in active promoters. Although Applicants contend that the phrase does not render the claim indefinite and requires no other limitations, Applicants have amended the claims to eliminate any indefiniteness or confusion in the original language. Support for the amendments to claim 1 and claim 2, described herein, is provided in the Remarks.

The Examiner has also indicated that the word "respectively" is vague and confusing. Applicants have amended the claim to indicate the relationship of the members of the Markush group with their respective Sequence Identification Numbers.

In view of the comments above and the amended claims, Applicants believe that the rejections for indefiniteness have been overcome. Applicants respectfully request that the rejections on this ground for claims 1-9 be withdrawn.

VI. Rejections under 35 U.S.C. §102(b)

Claims 1-9 are rejected under 35 U.S.C. §102(b) as being clearly anticipated by Calvert et al.

The Examiner has rejected claims 1-9 by alleging that Calvert et al. discloses a nucleic acid sequence having an "98.2% overall identity to the sequence of the instant

SEQ ID NO:3." The Examiner then argues that the Calvert et al. sequence is the same of SEQ ID NO 3 because the only unmatched nucleotides between the two sequences exist at the 5' and 3' ends that the Examiner contends are likely to be cloning sequences.

The Examiner's argument does not meet the requisite criteria on which to base on which to base an anticipation rejection. Anticipation can only be established by a single prior art reference which discloses each and every element of the claimed invention. Anticipation is not shown even if the differences between the claims and the prior art reference are "insubstantial" and the missing elements could be supplied by the knowledge of one skilled in the art. *Structural Rubber Prod. Co. v. Park Rubber Co.*, 749 F.2d 707, 223 USPQ 1264 (Fed. Cir. 1984). As the Examiner has correctly identified, the nucleotide sequence of the cited art is not 100% identical with the sequence of the cassava vein mosaic virus promoter shown in SEQ ID NO 3, the pA promoter. More importantly, Calvert et al. describes the entire genome of the cassava vein mosaic virus comprising 8158 base pairs of which only a small portion overlaps with the promoter sequence in SEQ ID NO 3 of the present invention. No where in Calvert et al., either the J. of General Virol., 76:1271-1278 (1995) paper or the GenBank EMBL/DDJB sequence with Accession Number U20341, is a promoter sequence described that corresponds with any of the promoters of the present invention. Furthermore, the cited art does not teach or suggest that any region of the complete genome could be isolated and operably linked to a heterologous sequence for use in initiating transcription of that sequence. Because anticipation can only be established by a single prior art reference which discloses each and every element of the claimed invention, Applicants argue that the criteria for such is not established here as no promoter sequence was identified in the cited art.

Thus, based on the foregoing, Applicants believe that the rejection for anticipation by Calvert et al. has been overcome. Applicants respectfully request that the rejection on this ground for claims 1-9 be withdrawn and the claims proceed to allowance.

VII. Summary

Applicants believe that a complete response is provided in the foregoing amendments and remarks to each issue and grounds for rejection and objection raised by the Examiner. Applicants submit that patentable subject matter exists with regard to the pending claims and therefore respectfully requests favorable action and entry of the presents Amendments and Response. The application is now believed to be in proper condition for allowance and early notification of allowance is earnestly solicited. The Examiner is invited to telephone the undersigned if it would be deemed helpful to advance the application.

Respectfully submitted,

12 / 13 / 01
Date

Emily Holmes
Emily Holmes, Reg. No. 40,652

THE SCRIPPS RESEARCH INSTITUTE
Office of Patent Counsel
10550 North Torrey Pines Road
Mail Drop TPC-8
La Jolla, California 92037
(858) 784-2937

APPENDIX I

1. (Amended) An isolated nucleic acid molecule comprising a promoter nucleotide sequence that [is capable of initiating] initiates transcription of an operably linked heterologous nucleic acid sequence in a plant cell wherein said nucleotide sequence has at least 80% identity to 18 sequential nucleotides of the cassava vein mosaic virus (CsVMV) promoter shown in SEQ ID NO 3 (pA).

2. (Twice Amended) The nucleic acid molecule of claim 1 which comprises a nucleic acid sequence selected from the group consisting of CVP1, CVP2, pA, pB, pC, pD, pE, p_ΔB, p_ΔC, p_ΔD1, p_ΔD2, p_ΔD3, p_ΔDE1, p_ΔDE2, p_ΔDE3 and p_ΔE, having the respective sequences shown in SEQ ID NOs 1, 2, 3, 4, 5, 6, 7, [8,] 9, 10, 11, 12, 13, 14, 15, 16, and 17[, respectively].